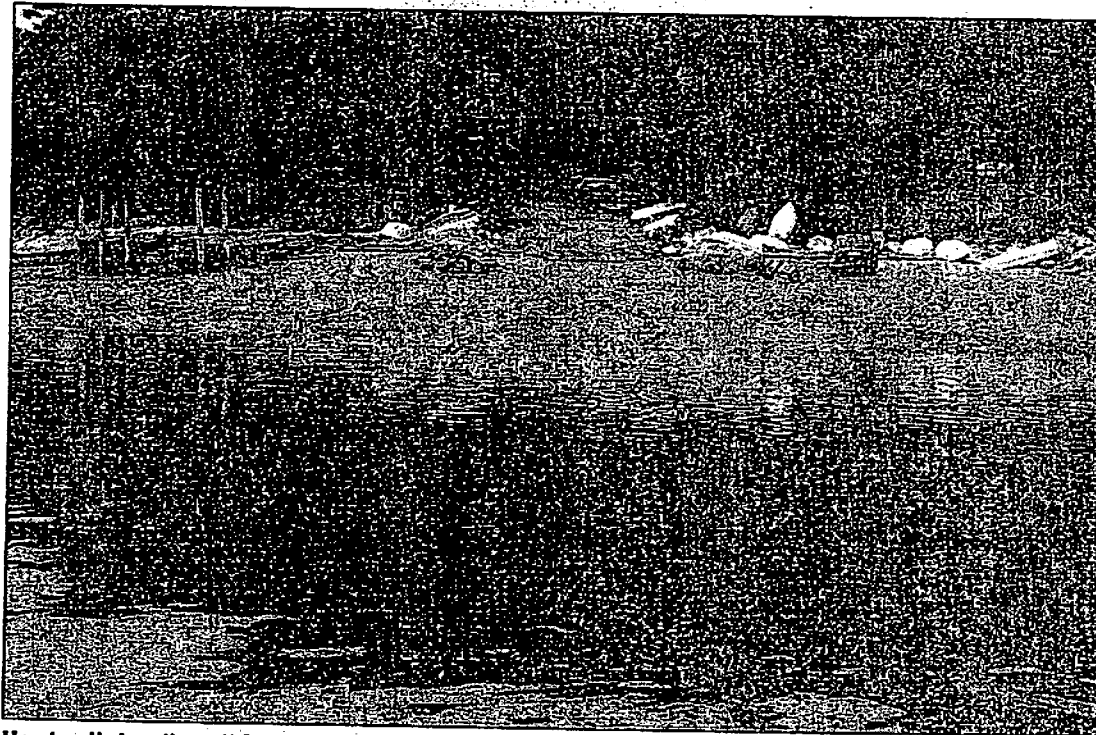


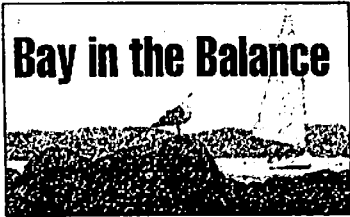
## PART V: Pollution Patrol – Love that Dirty Water



Howland's Landing off Standish Shore is one of several sites in Duxbury where high levels of bacteria have been found after heavy rains. The levels usually fall within acceptable ranges after an outgoing tide.

*Photo by David Grossman*

## Bay in the Balance



By DEBORA BABIN KATZ

The solution to pollution is dilution.

That cozy ditty, courtesy of Harbormaster Don Beers, underscores how Mother Nature has protected the waters of Duxbury Bay. With the tides rushing in and out twice a day, the bay has been the beneficiary of a natural cleansing that for centuries kept its waters pristine.

Statistics cited by environmentalists shows that the bays - those in Duxbury, Kingston and Plymouth — have a tidal exchange of more than 66 percent. That's a lot of cleansing every 12 hours, but as Beers and other protectors would agree, it is no longer nearly enough.

The advent of civilization and the unending pressure to develop the coastline has produced an array of pollutants that have undermined nature's ability to tidy up. A 1974 study launched by the Mass. Division of Marine Resources in our bays resulted in water sampling stations, including three in Duxbury, being set up around the bays.

The study cited pollution coming from several sources — from factories, from boat motors and surface drains, from holding tank facilities, from yachts clubs and particularly from the overflow at the Plymouth sewage treatment plant.

The treatment plant, said the study, was overloaded due to storm drainage and ground water infiltration. Also discovered were chlorinated hydrocarbons

such as Lindane, Aldrin, DDD and DDT. The evidence of these pesticides prompted pesticide-sampling stations to be established throughout the greater bay area and included one at Blue Fish River and another at the Back River. It was clear the solution by dilution wasn't working.

Federal legislation enacted in 1972 established a marine protected areas system and made the Plymouth, Kingston, and Duxbury Bays part of the Cape Cod Bay Ocean Sanctuary. Ned Lawson, a member of Duxbury's ocean sanctuary's committee, described the new law as an act to ban the expansion of municipal effluent discharges into local waters. It was a way of checking the increasing pollution coming from Plymouth's treatment plant.

But it wasn't enough. In the 1980s Duxbury worked hard to stop Plymouth from expanding its treatment plant which was already in violation of the Ocean Sanctuaries Act. The

## Testing Bacteria in the Bay

	Test on 8/14/01	Test on 8/22/01
Island Creek	8	14
Landing Road	150	20
Howland's Landing	76	2
Hardin Hill	104	126
Shipyards Lane	36	4
West End (Powder Point Bridge)	560	22
Bath House	78	2
Residents Beach	184	18

Note: No single sample shall exceed 104 milligrams per liter.

plant had been built to treat 1.75 million gallons per day of wastewater. It was treating far more than that — 2.7 million gallons per day, and Plymouth was seeking approval from the Massachusetts Legislature to increase that figure to 4 million

measures and pushed for regulations requiring that any ocean discharge from an expanded Plymouth treatment plant be sent east of a line from the Gurnet to Rocky Point in Manomet.

Finally laws were enacted to

**The advent of civilization and the unending pressure to develop the coastline has produced an array of pollutants that have undermined nature's ability to tidy up.**

gallons a day under certain conditions.

The Plymouth effort, facing strong opposition from Duxbury, failed, as did a follow up request. Robert Millar, chairman of Duxbury's Ocean Sanctuaries Committee, spearheaded the drive to defeat both

ban any additional discharges into the Cape Cod Bay Ocean Sanctuary. "We wanted Plymouth to do one of two things," said Lawson, "either a land sewerage plant or an outside embayment. Land treatment made the most sense." Eventually Duxbury won out as Ply-

mouth opened a new treatment plant at Camelot Park this year.

"Plymouth was a prime contributor to the bay's pollution and it took 30-plus years to solve," said Clint Watson, a former member of the sewage advisory committee.

In 1988, former state Sen. William Golden, a Weymouth Democrat, proposed new legislation that would visit strict environmental rules through the Plymouth-Kingston-Duxbury Bay region. He wanted to designate the bays as an Area of Critical Environmental Concern (ACEC) and Duxbury considered the idea as Conservation Officer Joe Grady recalls. But officials from Plymouth and Kingston said no and Golden's proposal fell short.

"Plymouth and Kingston are pro-development which is probably why they voted down the ACEC for their bays," said Lawson.

In the 1990s, pollution problems in Kingston's Rocky Nook neighborhood were receiving press attention. As Frank Germano of the Division of Marine Fisheries recalled in 1996, many of the septic system along the Duxbury portion of Kingston Bay were failing or stressed. Coliform bacteria levels were abnormally high, well above even minimum acceptable levels. Kingston solved the problem by immediately hooking into a new treatment plant.

In Duxbury, bay pollution has historically come from individual disposal systems, storm drains and from powerboats. The town, how-



**Dilution, says Harbormaster Don Beers, is no longer the solution to pollution.**

*Staff Photo*



**Ned Lawson, a protector of the bay for many years, worries about a major new development at Cordage Park.**

*Photo by David Grossman*

ever, has always taken a proactive stand on water quality issues. Pollution problems at Blue Fish River, for example, resulted in the state's first shared septic system. The Bay Road treatment plant, completed this year, addressed failing systems along that shoreline, although as Health Agent Jennifer Dalrymple notes, it hasn't solved all the pollution problems.

Land problems become water problems, said Germano in a recent interview. Run off from rain flows into street storm drains that empty into the bay. As a result, there is a direct correlation between weather and water quality, particularly on beaches located at street landings such as those at Harden Hill, Landing Beach, Shipyard Beach and Howland's Landing.

Water testing, done weekly by the harbormaster's office at eight sites, is now submitted to an outside lab for testing with a 24 hour turn around to the Board of Health office. (The Mass. Division of Marine Fisheries also tests periodically.) A review of lab reports over the past ten years shows increases in unacceptable bacteria levels

at certain locations that typically tested acceptably on a follow up test.

"They usually run high after a rainstorm due to drainage of streets and run off," said Dalrymple. Technically, the town is required under the Beach Act to close beach areas with unacceptable counts.

"If it's above the acceptable level, we are supposed to post

and close down the area," acknowledges Dalrymple, "but I have no staff or money to patrol it." The health agent points to Duxbury's near 80 percent tidal exchange as nature's solution in this case. "Because we have large tides, she said, "it's most likely that the levels will change after a tide, and we may be closing a beach we shouldn't be closing."

Efforts are now underway to correct pollution problems caused by storm drainage. An area of concern has been Snug Harbor "because there is a bacteria pollution from the current storm system which is going into the bay," said Conservation Officer Grady. Duxbury recently received a \$25,000 grant from Coastal Zone Management to redesign the drainage system at Snug Harbor.

Pollution has also come from overboard sewage dumping. Four years ago, Don Beers obtained federal money to acquire a pump-out boat and a pumping station on the town pier. "We give them (boaters) the opportunity to get rid of it free," said Beers. The federal government pays 75 percent of the operating costs.

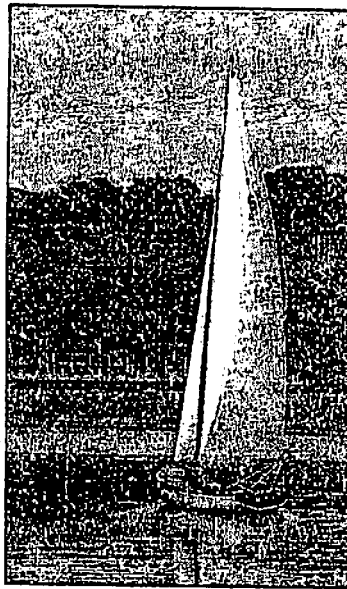
Other anti-pollution programs include Duxbury's annual Beach Clean Up which is part of the state's Coastal Sweep program. Now in its 18<sup>th</sup> year, it began when the Environmental Protection Agency asked Battelle Labs to evaluate the debris washed up on Duxbury Beach. Last year, Duxbury had more residents participate and cleared more miles of debris than any other South Shore community.

While Duxbury has a handle on bay pollution, issues still

loom. Perhaps the most potentially troublesome is the future of Plymouth's Cordage Park.

"There are huge plans for that property," said Grady, "It is designated a port, and as such has special exemptions from environmental laws." Lawson warns that those plans include slips for several hundred boats. "We need to be aware of that, and be prepared to deal with it."

If Duxbury is true to its past, it will be prepared ... after all, we are the pollution patrollers.



**Blue Fish River was also among several sites tested for pesticides in the early '70s.**

*Photo by David Grossman*

## **Bay in the Balance**



### **CREDITS**

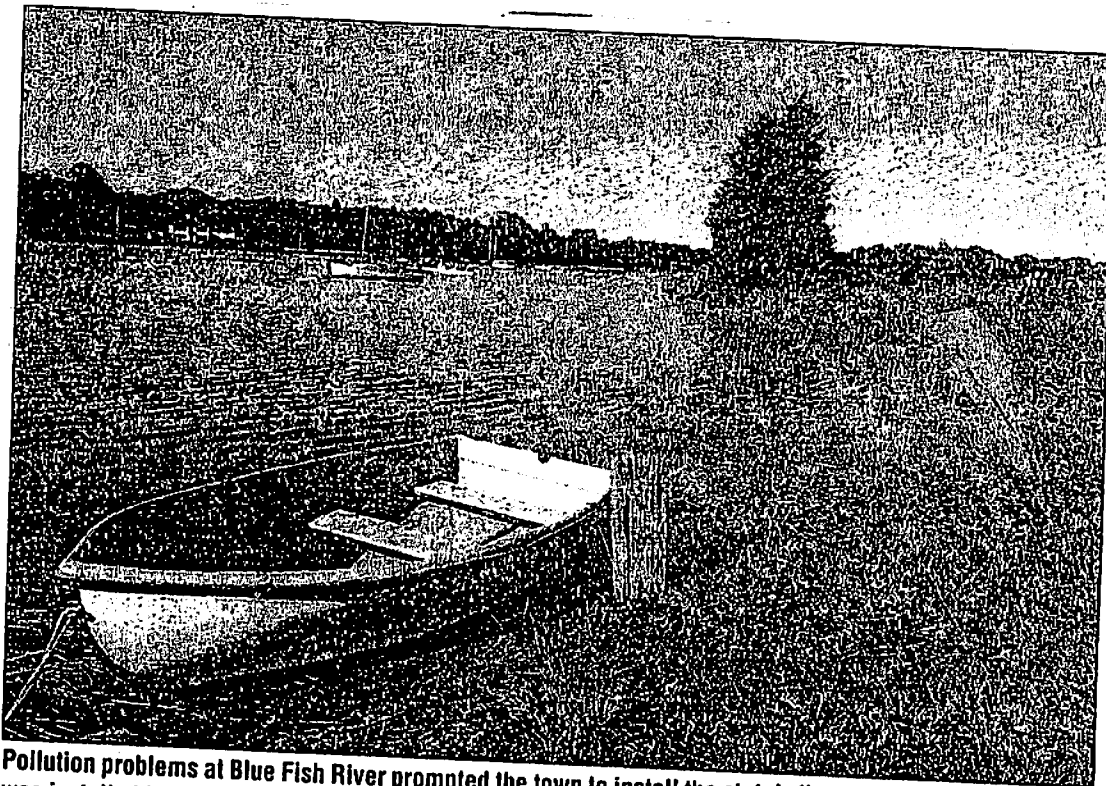
The Bay in the Balance series is edited by David Cutler. Special thanks to David Grossman for providing much of the photography for this series. For more of his work visit [www.gurnetroad.com](http://www.gurnetroad.com)

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The waters off Shipyard Lane sometimes have unacceptable levels of bacteria after a rainstorm.

Photo by David Grossman



Pollution problems at Blue Fish River prompted the town to install the state's first shared septic system. It was installed in 1996.

Photo by David Grossman

A four-year study commissioned by the state Division of Marine Resources in 1971 resulted in sampling stations being located throughout the Plymouth, Kingston, Duxbury Bay region.

Here is an explanation of the symbols:

- HS: Haul Seine Station (2)
- OS: Offshore Sampling Station (4)
- B: Bacteria Sampling Station (3)
- P: Pesticide Sampling Station (7)
- S: Monthly Shore Sampling Station (5)

